



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/584,779

02/03/2009

Thomas Scherer

WUE-51

4949

26875 7590 01/31/2011  
WOOD, HERRON & EVANS, LLP  
2700 CAREW TOWER  
441 VINE STREET  
CINCINNATI, OH 45202

EXAMINER

DUKE, EMMANUEL E

ART UNIT

PAPER NUMBER

3784

MAIL DATE

DELIVERY MODE

01/31/2011

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/584,779	<b>Applicant(s)</b> SCHERER ET AL.	
	<b>Examiner</b> EMMANUEL DUKE	<b>Art Unit</b> 3784	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11/15/2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06/27/2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)              |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____   |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application    |
| Paper No(s)/Mail Date _____   | 6) <input checked="" type="checkbox"/> Other: <u>SPEC 11/15/2010</u> |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claims 1 and 3-23** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 8, the phrase “at least two cooling circuits are completely independent of each other” is confusing and unclear as to how at least two cooling circuits are completely independent of each other; since they are shown to be interconnected and there are no disclosures in the specification for such limitation.

### ***Claim Objections***

2. The amendment filed November 15<sup>th</sup>, 2010, is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: In claims 1, line 8; the phrase “circuits completely independent of each other since they are shown to be interconnected”; and there are no disclosures in the specification for such limitation.

Applicant is required to cancel the new matter in the reply to this Office Action.

***Claim Objections***

3. Claim 11 and 23 are objected to because of the following informalities:
- In claim 1, line 4; the phrase “a cold consumer” should be changed to --the cold consumer-- for proper antecedent basis.
  - In claim 23, line 1; the phrase “a cooling system” should be changed to --the cooling system-- for proper antecedent basis.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claims 1 and 3-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Simadiris et al. (U.S. PG Pub. No.: 2003/0042361), hereinafter referred to as Simadiris et al. ‘361.***

Regarding claim 1, Simadiris et al. ‘361 disclose a cooling system for the cooling of heat producing devices in an aircraft (Fig. 6-8: [0023]), comprising: a cold producing device (see annotated Fig. 8: [0043-0044], wherein 12 constitutes a cold producing device) including at least two cooling machines (Fig. 8: [0043-0044], wherein chiller 30

Art Unit: 3784

constitutes a cooling machines) working independently of each other (as shown in Fig. 6-7: wherein the chillers for Door 2 are depicted independently operating from the chillers of Door 4), at least one cold consumer (Fig. 8: [0032], wherein a galley air cooling unit 18 constitute a cold consumer), and a cold conveyance system (Fig. 1-2: [0036-0037], wherein a recirculation/redistribution unit 32 constitute a cold conveyance system) which connects the cold producing device and the at least one cold consumer, whereby the cold conveyance system including at least two cooling circuits completely independent of each other (as shown in Fig. 6-7: wherein the RU 32 for Door 2 are depicted independently operating from the RU 32 of Door 4), the at least two cooling, circuits (48, 49, Fig. 8: [0045]) supplying a cold carrier medium (27, Fig. 8: [0045]) that has been cooled by the cold producing device to the at least one cold consumer and returning the cold carrier medium from the at least one cold consumer to the cold producing device, whereby the at least two cooling machines are coupled in parallel to the cold conveyance system (as shown in Fig. 4: wherein in Door 2, two RC 30 are couple in parallel to the RU 32) such that each of the at least two cooling circuits are thermally coupled (as shown in Fig. 4: wherein in Door 2, lines 48 and 49 are shown thermally coupled) to the at least two cooling machines.

Regarding claim 3, Simadiris et al. '361 disclose the cooling system in accordance with claim 1, wherein the number of cooling machines of the cold producing device is configured to cover a cold requirement (Fig. 8: [0031], [0044]) for the aircraft during ground operation.

Regarding claim 4, Simadiris et al. '361 disclose the cooling system in accordance with claim 1, wherein the at least two cooling machines use air outside of the pressure cabin ([0007], wherein air from a remote location of the chiller constitute air outside of the pressure cabin) of the aircraft as a heat sink (Fig. 9: [0050]) in order to expel heat, and the warm extracted air is expelled outside of the pressure cabin [0007].

Regarding claim 5, Simadiris et al. '361 disclose the cooling system in accordance with claim 1, wherein one of the at least two cooling circuits (as shown in Fig. 6: wherein 48) is provided in each of a front half (Fig. 4: wherein Door 1 portion constitutes a front half) of the aircraft.

Regarding claim 6, Simadiris et al. '361 disclose the cooling system in accordance with claim 1, wherein one of the at least two cooling circuits (as shown in Fig. 4: wherein 48, 49) is provided on each side of the aircraft in relation to a longitudinal axis (Fig. 4: wherein an axis from Door 1 to Door 4 constitutes a longitudinal axis) of the aircraft.

Regarding claim 7, Simadiris et al. '361 disclose the cooling system in accordance with claim 6, wherein cold consumers (as shown in Fig. 7: wherein 18) positioned in the aircraft are supplied with the cold carrier medium from the at least two cooling circuits (as shown in Fig. 7: wherein cooling circuits 48 in Door 2 portion and Door 4 portion constitute two cooling circuits).

Regarding claim 8, Simadiris et al. '361 disclose the cooling system in accordance with claim 1, wherein each cooling circuit (as shown in Fig. 7: wherein each of the RC 32 in Door 2 portion and Door 4) includes at least one cold carrier pump (Fig. 2: [0041], wherein a liquid pump 44 is a cold carrier pump) for the circulation of the cold carrier medium.

Regarding claim 9, Simadiris et al. '361 disclose the cooling system in accordance with claim 8, wherein at least two cold carrier pumps (as shown in Fig. 8: wherein two cold carrier pumps 44) are assigned to cooling circuit and are supplied with electric energy (Fig. 8: [0049], wherein a control device 66 associated with each RC 32 supplies electric energy) independently of one another.

Regarding claim 10, Simadiris et al. '361 disclose the cooling system in accordance with claim 1, wherein at least one storage unit (46, Fig. 8: [0049]) for intermediary storage of the cold carrier medium is assigned to each cooling circuit.

Regarding claim 11, Simadiris et al. '361 disclose the cooling system in accordance with claim 1 wherein each of the at least two cooling circuits are thermally coupled to the cold consumer by a heat exchanger (as shown in Fig. 1 and 9: [0035-0036] and [0050]).

Regarding claim 12, Simadiris et al. '361 disclose the cooling system in accordance with claim 1, wherein the at least one cold consumer has a secondary cold conveyance system (Fig. 1 and 9: [0032], wherein a galley plenum 22 constitutes a secondary cold conveyance system) in which cold is transferred from the cold carrier medium by a secondary cold carrier (Fig. 1 and 9: wherein air in the plenum 22 constitutes a secondary cold carrier).

Regarding claim 13, Simadiris et al. '361 disclose the cooling system in accordance with claim 1, further comprising a central control unit (58, Fig. 8: [0009], [0048]) configured to control the cold output of each of the at least two cooling circuits, dependent upon at least one of the specified parameters ([0050], wherein a 30° F is one of the specified parameters) for a current cold requirement.

Regarding claim 14 Simadiris et al. '361 disclose the cooling system in accordance with claim 13, wherein the specified parameters reflect the temperature of the cold carrier medium measured in at least one point [0050] in the cooling circuits and/or information about the current cold requirement and/or a pressure (Fig. 9: [0050], wherein a differential pressure gauge 59 reflect a pressure) of the cold carrier medium in the cooling circuits.

Regarding claim 15 Simadiris et al. '361 disclose the cooling system in accordance with claim 1, wherein the cold output is controlled so as to adapt to a current cold requirement in the aircraft by turning individual cooling machines of the cold producing device on and off (Fig. 10: [0009] and [0051]). Applicant is reminded that it has been held that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

Regarding claim 16 Simadiris et al. '361 disclose the cooling system in accordance with claim 1, wherein a check valve [0009] and a bypass line [0040] which bypasses the cooling machine are assigned to each cooling machine.

Regarding claim 17 Simadiris et al. '361 disclose the cooling system in accordance with claim 13, wherein the cold output of the at least two cooling machines is continuously controllable ([0025] and [0051]) by the central control unit.

Regarding claim 18 Simadiris et al. '361 disclose the cooling system in accordance with claim 13, wherein the central control unit records an output (see annotated Fig. 8: wherein in liquid temp 62t constitutes an outlet) temperature of the cold carrier medium leaving the at least two cooling machines and controls the at least two cooling machines in accordance [0049] with the output temperature measured and recorded.

Regarding claim 19 Simadiris et al. '361 disclose the cooling system in accordance with claim 18, wherein the cold output of the at least two cooling machines can be changed by a bypass valve ([0009] and [0040]) and/or by varying a speed of a compressor (34, Fig. 1 and 2: [0009] and [0037]) used in the at least two cooling machines.



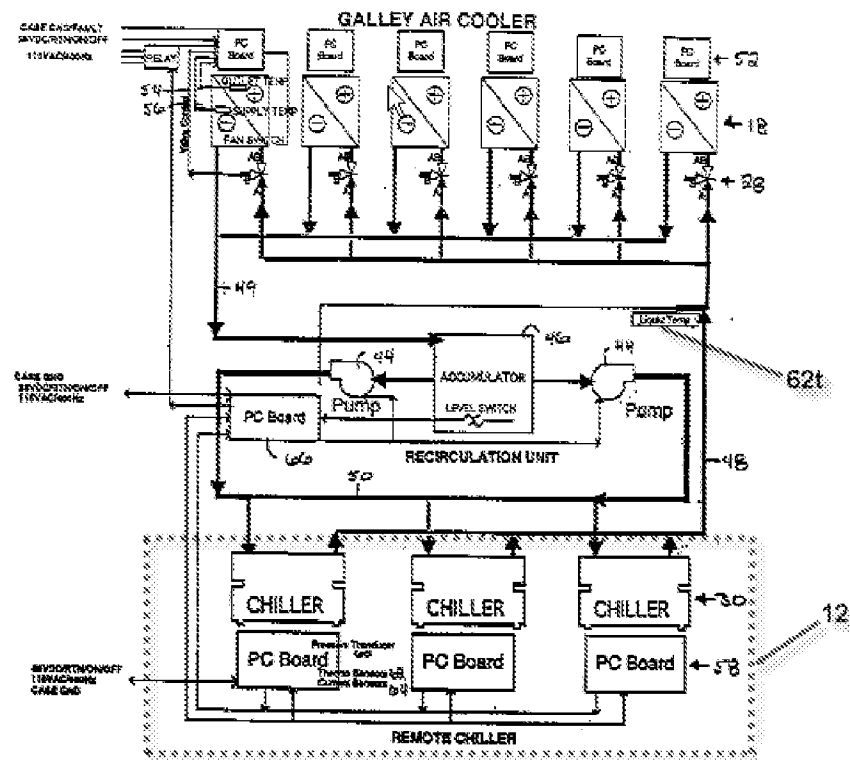
Art Unit: 3784

Regarding claim 20 Simadiris et al. '361 disclose the cooling system in accordance with claim 13, wherein the central control unit changes a quantity ([0040] and [0043], wherein a change in flow rate 4.6gal/min to 10 gal/min constitute the cooling system changes a quantity) of the cold carrier medium supplied in each of the cooling circuits.

Regarding claim 21 Simadiris et al. '361 disclose the cooling system in accordance with claim 20, wherein the central control unit changes a speed of at least one cold carrier pump ([0009] and [0037]) in the at least two cooling circuits.

Regarding claim 22 Simadiris et al. '361 disclose the cooling system in accordance with claim 1, wherein each cooling circuit is supplied with electric energy (Fig. 8: [0049], wherein a control device 66 associated with each RC 32 supplies electric energy) independently of at least one other cooling circuit.

Regarding claim 23 Simadiris et al. '361 disclose an aircraft [0002] with a cooling system [0002] in accordance with claim 1.



Annotated FIG. 8

***Response to Arguments***

5. Applicant's arguments filed November 15<sup>th</sup>, 2010 have been fully considered but they are not persuasive.

In response to Applicant's argument set forth on page 14, lines 6-10, the Applicant argued that none of the illustrated embodiments of Simadiris "provides two completely independent cooling circuits that are thermally couple to the same two (or more) cooling machines in a cold producing device". The Examiner respectfully disagree; Simadiris et al. 361, discloses two completely independent cooling circuits for Door 2 portion and Door 4 portion that are thermally couple via supply line 48 and return line 50 to the same two (or more) cooling machines 30 in a cold producing device see Fig. 6-7: [0046], wherein various configurations are anticipated.

In response to Applicant's argument set forth on page 14, lines 11-13, the Applicant argued that Simadiris does not provide the advantages of the currently claimed system, the limitations on which the Applicant relies; (i.e. which can continue to provide adequate cooling in the event of technical or mechanical failure of either a cooling machines or a cooling circuits) are not stated in the claims. It is the claims that define the claimed invention, and it is claims, not specification that are anticipated or unpatentable. *Constant v. Advanced Mirco-Devices Inc.*, 7 USPQ2d 1064.

In response to Applicant's argument set forth on page 14, lines 14-24, the Applicant argued that "USPTO consider the EPO allowance and follow the spirit of the Patent Prosecution Highway during reconsideration of the rejections"; and as noted by the Applicant, the Patent Prosecution Highway was not applied for in the current case because it is not among the USPTO current prosecutorial practice.

In response to Applicant's argument set forth on page 15, 3<sup>rd</sup> paragraph, with respect to "additionally-cited references (Fischer, Nikly, Pearson and Temmyo) fail to disclose cooling system having two completely independent cooling circuits thermally coupled to same cooling machines" have been considered but are moot in view of the

Art Unit: 3784

new ground(s) of rejection under 35 U.S.C. 102(b) as being anticipated by Simadiris et al. '361 as stated above.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Takahashi et al. (U.S. Patent No. 5,052,472) disclose two completely independent cooling circuits thermally coupled by heat exchanger to a cooling machine.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action. (07-40)

Art Unit: 3784

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EMMANUEL DUKE whose telephone number is (571)270-5290. The examiner can normally be reached on Monday - Friday; 8:00am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler or Frantz Jules can be reached on 571-272-4834 or 571-272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Frantz F. Jules/  
Supervisory Patent Examiner, Art Unit 3744

/EMMANUEL DUKE/  
Examiner, Art Unit 3784  
01/24/2011